

The Work of the Mayos

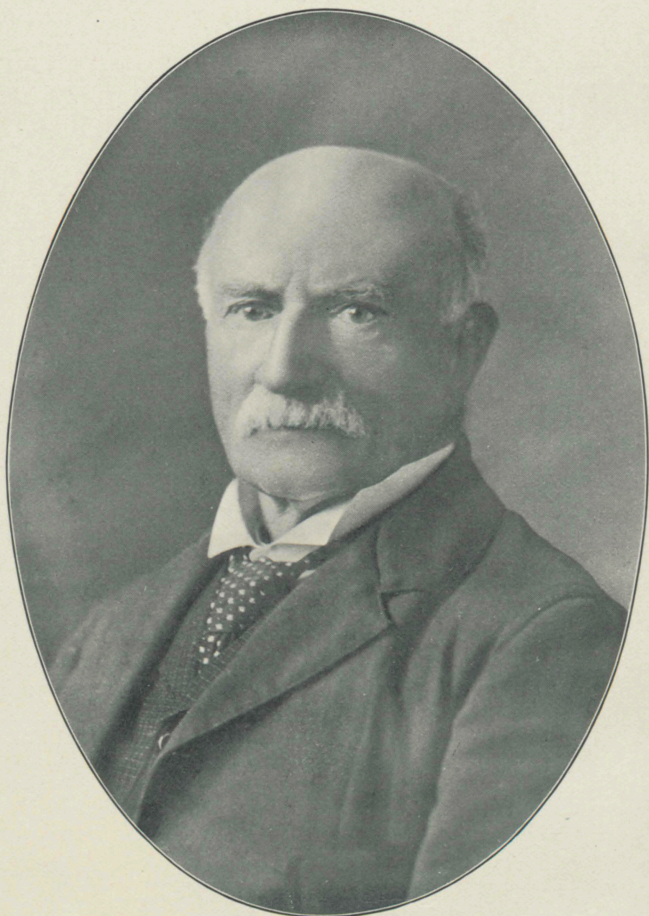
By

Oliver E. Smith, M.D.

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WILLIAM WARRELL MAYO,
at 84 years of age.

THE WORK OF THE MAYOS

A PAPER READ AT THE SEMI-ANNUAL MEETING OF THE
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THE WORK OF THE MAYOS

EIGHTY-FOUR years ago there was born at Eccles Parish, near Manchester, England, to James and Sarah Mayo, a son who was destined after a varied, useful, interesting, and perilous career to found the most remarkable surgical clinic on this Continent.

William Warrell Mayo early evinced a desire to become a scientific man. With the completion of his common and high school education, he became a student of John Dalton, chemist and physicist, at Manchester. At the age of twenty-two he sailed for New York, where he served a year as a drug clerk. At the end of the year he started for the west, making his way partly on foot and partly on canal boat to Toledo, Ohio, where he again served as a drug clerk. His next move was to Laporte, Indiana, where he attended two courses of lectures at the Indiana Medical College, graduating in 1847. Later he took a post-graduate course at the Missouri University, and in 1871 he attended the college of Physicians and Surgeons, New York, obtaining a post-graduate degree. While here, he made the acquaintance of Louise Abi-

gail Wright, whom he married shortly after his graduation from the Medical College in 1850.

At the end of four years laborious practice in Indiana, Dr. Mayo found himself suffering from malarial poisoning, accompanied by jaundice. An epidemic of cholera was raging throughout Indiana and Illinois at this time, and Dr. Mayo in his poor state of health felt unequal to cope with the cases that he was called upon to attend.

One morning he took his horse and chaise, bade his wife farewell, told her that he would drive until he should find some more healthful place, and again started for the west. He took up a claim where Duluth is now situated, and through the kindness of Governor Gorman of Indiana, was allowed to form a county which he termed St. Louis County, Dr. Mayo being made first county commissioner. There were fifteen men living in the county. Dr. Mayo took the first census, traveling around the lake by boat, rowed by half-breeds. After establishing this claim he went to St. Paul.

Dr. Mayo started from St. Paul with two companions; one a gentleman from Philadelphia, the other a resident of St. Paul, to walk to Superior, Minnesota. After proceeding three days upon their journey, they were set upon by Indians, and narrowly escaped with their lives. That night while sleeping heavily from the fatigue and excitement of the day, their camp

took fire, and they were awakened by the noise and heat of the flames. They lost all their provisions, ammunition, and firearms, and nearly all of their clothing. In this frightful plight they resumed their journey without food or sufficient clothing. They subsisted for five days upon bark, and herbs, and leaves, and finally one of the party, the gentleman from Philadelphia, became insane. He imagined that his companions were plotting to kill him. On they tramped, keeping the insane man between them. Suddenly, in a fit of desperation, the man who had lost his reason seized Dr. Mayo's small dog, biting into his throat and sucking his blood. The dog was instantly killed and divided into three parts to appease the hunger of the starving pioneers. At the end of two days more, the seventh, without food other than the dog, when hope was nearly gone, Dr. Mayo, with the assistance of his sane companion, drew himself up into the branches of a tree and scanned the horizon. A faint curl of smoke was discovered in the distance, and the desperate men dragged themselves through the forest until they reached it. Here they were cared for and fed; the insane man died; the others survived after an illness of many weeks.

In the mean time Mrs. Mayo had come on to St. Paul with a baby girl. After establishing his claim in St. Louis County, Dr. Mayo joined his wife at St. Paul, where he practiced a short time. The capitol was re-

moved from St. Paul to St. Peter in 1856, and the Doctor took up his residence there. Finding but a limited amount of practice, the Doctor engaged in a farming enterprise with his wife's uncle, Nathaniel Wright, at Lesueur, Minnesota. Here he built a house, cutting his own logs. Farming proved unprofitable, and he commenced to practice again, at this place. Before he had his first patient, he was notified by the only other physician in that section that there was not enough practice for two; that there would be nothing for him to do, and he must leave. Dr. Mayo laid down the tools with which he was building his house, and straightening himself up, replied, "I have come to stay. If either of us leave, you will be the one."

A short time later, while the Doctor was shingling his barn, an easterner came for him and asked him to go with him to visit his sick cow. This was the Doctor's first patient at this town. The Doctor willingly complied, and brought the patient through safely. His next patient was a horse, which promptly died, and Dr. Mayo made his first autopsy at Lesueur, and found the horse had died of intestinal obstruction due to volvulus.

At this time Nathaniel Wright built a boat of which Dr. Mayo became Captain, and for two years ran from St. Paul to Fort Ridgely, on the Minnesota River, continuing the practice of his profession during the intervals when on land.

The next important event in his varied career was an appointment by Senator Wilkins as army surgeon, with post at New Ulm. Shortly after his arrival the town was surrounded by Indians. They finally succeeded in overwhelming the residents, and one of the great historic massacres of early frontier times resulted; fifteen hundred whites being killed. Dr. Mayo's description of this affair with the subsequent battle, which resulted in driving the Indians from the town, is most graphic and exciting. He says, "one of the most majestic sights of my life was that of the charge of five hundred mounted Sioux Indians under Little Crow, their chief. They rode with such daring skill and grace, not firing until they were within close range," and while the defenders of the town, among whom was Dr. Mayo who carried a shot-gun, were repelling the charge, another body of Indians was creeping into the town unnoticed. Many more were killed by these subtle warriors than by those who were making the open attack. The Indians were finally repulsed, and Dr. Mayo at once assumed charge of the wounded. He established a temporary hospital, and did all in his power, surgically and medically, for the unfortunate pioneers. The town was still surrounded by Indians, was cut off from supplies, and at the end of eight days the stock of provisions was exhausted. Here was a crisis that would try any man's soul. Sick, dying and injured men whose very lives depended

upon immediate action, looked to him as their only salvation, and then Dr. Mayo rose to the occasion and showed the great bravery that marked all his career. He secured wagons, horses and mules, loaded in the wounded, and started upon the perilous march to Mankato, expecting every moment to be attacked and see his entire party massacred. Fortunately this did not occur, and the party reached their destination in safety.

At this time an order came from Washington, transferring Dr. Mayo to Rochester, Minnesota (then a small village of two thousand inhabitants), to establish an enrolling post for volunteers of the Civil War. He was made surgeon of the Board of Enrollment during Lincoln's administration. Dr. Mayo at once engaged in general practice in addition to his duties on the Board of Enrollment, and at the close of the War he found himself well established.

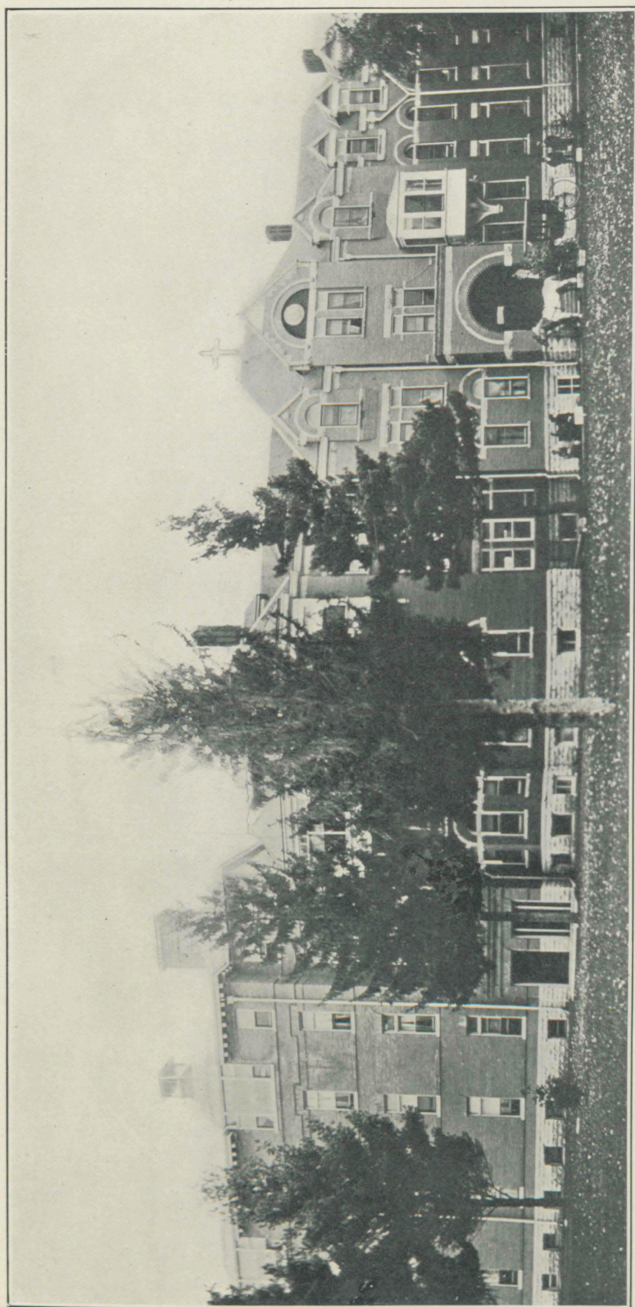
During the War, in 1864, an event occurred which was destined to pave the way to the establishment of the great surgical clinic which now exists. Three Sisters of St. Francis came from Canada and opened a small school. They were not received with much favor by the people of Rochester, and Dr. Mayo with his kind heart and liberal tendencies at once became their champion. He offered his services in any capacity, and the Sisters appointed him surgeon to their school.

Nineteen years later, on the 20th of August, 1883, another event took place which again shaped the fates

in the direction of the establishment of the great clinic. A terrific cyclone visited Rochester, killing and wounding numbers of its citizens and destroying one-third of the town. At this time Dr. Mayo was living on a small farm outside the city limits. He had given up making night calls, partly because of his increasing years and partly to see more of his family, and especially his two boys who were approaching manhood. Dr. Mayo was standing in his orchard on this eventful day, when suddenly, great dark clouds were seen moving rapidly, meeting and mingling with ominous, whistling sounds. It was the work of but a few moments for this terrific visitation to do its vast destruction. The Doctor's homestead suffered with the rest. His buildings were damaged, and 1,100 apple trees blown down. The young men, William and Charles, were over at Clayton at a butcher shop, dissecting a beef's eye. The proprietor of the shop, scenting the coming danger, started to drive the young men home. As they approached the town they crossed a bridge while the storm was at its height. The wheels of their vehicle had no sooner left the bridge than it was carried away. Then the wagon was nearly bowled over by the roof of a house which went flying through the street. William took the reins and told Charles to lower his head; thus they continued their perilous drive until a strong brick building was reached in which they took refuge. With the subsidence of this terrific hurricane,

Dr. Mayo, assisted by his sons, commenced the arduous task of caring for the injured and dying. All through the long black night that followed they worked with unceasing toil, surrounded by the sad and gruesome sights of such a catastrophe. The following day Dr. Mayo was given authority to take entire charge of the injured. Eight of the sufferers were taken to Dr. Mayo's home, where Mrs. Mayo cared for them day and night. On the second day after the cyclone, the Sister Superior from the little French school came to Dr. Mayo with an offer of help in the way of providing two Sisters to nurse the sufferers. Dr. Mayo was frank, and at once asked for four; two for day and two for night duty.

In the following June a convention of Sisters was held at Rochester, and the Sister Superior came to Dr. Mayo to tell him that a vote had been passed that something should be done to mark their respect and gratitude for Dr. Mayo's long service to them and to the community. Dr. Mayo thanked them, but said he felt they were under no obligation to him, and he could not consider accepting their kindness, however much he appreciated it. They then told him that they would like to furnish him funds to build a hospital. Dr. Mayo did not rush into the matter without due deliberation. He told them of the possibilities of the hospital being a failure, and of their losing their money, and thought it wiser of them



• ST. MARY'S HOSPITAL, ROCHESTER, MINN.

to reconsider and report to him a week later. This they did, and at the end of the week they were still firm in their purpose. He told them frankly it would take a large amount, but they answered, "he could have what he needed." He mentioned the sum of \$50,000. The Sister Superior replied, "you can have it and \$50,000 more if necessary." They assured him that they had implicit confidence in his integrity and ability. Then Dr. Mayo proceeded to buy land and build a hospital. It was erected in 1885. The first building contained thirty beds. It was a marked success from the first, and has been enlarged from time to time until it now represents an outlay of between \$200,000 and \$300,000; contains 180 beds, and while not elaborate in its appointments, it is now an excellent modern hospital. Two operating and sterilizing rooms are in the newest portion of the building, and are complete in arrangement and furnishings. It was at once established as a surgical hospital, and Dr. Mayo relates with modest pride, "Never has there been a ripple of dissatisfaction or misunderstanding between the Sisters and the Doctors during the twenty years of the hospital's existence." Dr. Mayo advised the Sisters at the outset to conduct the hospital on a business basis. Those who could pay should do so, and those who could not were admitted as charity patients, but both classes were treated with the same conscientious, scientific care. It was to be non-sec-

tarian, and its beds were to receive people of any religion or any nation.

Illustrative of the firmness of Dr. Mayo, we will mention that Bishop Ireland, who came to visit the hospital a few years after its inauguration, felt that the Sisters should have some of the power which Dr. Mayo exercised, and suggested other changes in the management. When told of the Bishop's desires he simply said, "I am quite ready to resign if you wish, but if I remain I must remain at the head," and he remained. The Bishop did not press his ideas further.

As Dr. Mayo gradually relinquished his activities in his professional work, he found the affairs of the town and county and state being thrust upon him. He was elected to the State Senate of Minnesota, and served from 1890 to 1894. Although he was a staunch democrat, and Rochester was strongly republican, following his Senatorship he was elected Mayor of the City of Rochester and served two years with the fidelity, singleness of purpose and success which had marked his other labors. At the great political convention which nominated Alton B. Parker for President of the United States, Dr. William Warrell Mayo was the oldest and one of the most respected of delegates. His step is firm, his eye is clear, his head erect, his mind is active; well might we say in the language of Shakespeare, "He was a man, take him for all and all, whose like I shall not see again."

We have said that Dr. Mayo met and married at Fort Wayne, Ind., Louise Abigail Wright. It is interesting to us to know that the wife of this pioneer surgeon and the mother of these distinguished sons is of Connecticut stock. Her father, Horace Wright, was born in Wethersfield, Connecticut. He served in the War of 1812, and at its close walked from Canada to Jordan, N. Y., where he married Sallie Totten, and where Louise Abigail Wright was born in 1825.

Horace Wright was a mechanical genius. He built a trip-hammer and patented important machinery; walking to Washington and back to secure his patents. When twenty years of age, Louise Abigail Wright went to Albany, and six years later married Dr. William Warrell Mayo at La Porte, Ind. There were six children born to this family. One son and two daughters died in early life, one daughter, Gertrude Emily Mayo, surviving.

While living at Lesueur, in 1861, a son was born to Dr. and Mrs. Mayo who was named after his father, William. Four years later, in 1865, a second son was born at Rochester, who was named Charles. Both boys attended the public schools, primary and high, at Rochester, and both grew up upon the small farm outside the limits of the city. William was fond of horses; Charles of machinery. Both learned early to be of assistance to their father in his work. The elder Dr. Mayo says, "Thirty years ago I took both my

boys to an operation for hysterectomy. William was thirteen; Charles nine. A physician had been engaged to administer ether, but he fainted early in the operation. Charles stepped to the head of the table and took his place, while William acted as first assistant." This was the first attendance upon a capital operation of America's most distinguished surgeons. One at the age of nine, etherizer; the other at the age of thirteen, assistant, and Dr. Mayo adds with pride, "The patient made a good recovery." Dr. Mayo had a watchful eye to both the physical and intellectual development of his sons. They had their share of work to do upon the farm. He spent his evenings with them, and kept in touch with their progress in their studies. He arranged for each of them to spend a year in a drug store before entering the medical college, as he had done. William was sent to the University of Michigan at Ann Arbor, graduating in medicine in 1883. Charles was sent to Chicago because dissecting and clinical material was more abundant there than at the Michigan school. He graduated with honors in 1888. William, after graduating, went to Philadelphia, and had the advantage of assisting Dr. Joseph Price in his surgical work. Two years after graduating Charles went to Europe in the company of Dr. Albert J. Ochsner.

From this time on William and Charles became active assistants of their father in the surgical work at

St. Mary's Hospital. Their operations were early characterized by deep thought, marked caution, delicate technique and scientific precision, with records so honestly and carefully made and preserved that they have now become a valuable asset to the world of surgery. The amount of work which they have accomplished is truly fabulous. The hospital is never closed. Day in and day out, week in and week out, the work goes on. The most searching and scientific diagnoses are made of patients who come to the clinic, and operative procedures are not decided upon until all the symptoms and signs have been elicited and carefully weighed by their skillful associates and by themselves.

But a small proportion, ten to fifteen per cent., of the patients who go to Rochester to see the Doctors Mayo enter the hospital. They are first seen and examined at the office of the firm. The work of examining patients is carried on much as it is at an outdoor clinic of a metropolitan hospital. Associated in this work with the three Doctors Mayo are Dr. Stanchfield and Dr. Graham, who are partners in the firm; also Dr. Millet and Dr. Plummer. These associates and their assistants have their special lines of work in which they have become expert. Dr. Stanchfield, for instance, devotes his attention to diseases of the heart and lungs; Dr. Graham to diseases of the stomach, gall bladder and allied regions. Dr. Millet examines the genito-urinary cases.

Dr. Plummer devotes his time to X-ray examinations and other diagnoses calling for special instrumentation. Dr. Wilson of the University of Minnesota is bacteriologist and pathologist.

Up to the present year, Drs. William and Charles Mayo have seen nearly all of the cases, medical and surgical, after they have passed through the hands of the examining physicians, but I learned that henceforth their work will be confined to the cases which have been determined to be surgical, as the long hours of the afternoons were adding too heavy a burden to their exhausting surgical work of the morning.

Their offices are close by the station and Cook's Hotel, which is a very comfortable and commodious hostelry.

Visiting physicians who make known their special lines of work will be courteously invited to see cases of unusual interest. One is impressed here, as at the operating clinic, with the harmonious action of the entire staff, including assistants and nurses. As one of the members expressed it, "we work together as if we all belonged to one large family," and that is apparent at once to the visitor. There seem to be no jealousies, no friction. Each one has his part to perform, and each does his best and is satisfied with his lot. At the offices the new cases are distributed according to the character of their maladies. If a patient returns for subsequent visits, he understands

which physician he is to see. Every patient and every history is recorded, and this in itself is a great work, as from 100 to 150 are seen each afternoon.

By far the greater portion of people that go to Rochester, go to consult the Doctors, and the cry of the hackmen at the station is not to announce the various hotels, but the Doctor's office and the hospital. Work at the hospital commences promptly at eight-thirty every morning except Sunday. The visiting physician is ushered to a waiting-room where he registers and finds many others who have come from various parts of the United States and frequently from Europe. The Doctors William and Charles Mayo arrive promptly and prepare at once for their work. At this juncture they do not take time to meet the visitors or to have any conversation with them, but go directly to their respective operating tables. They operate in separate rooms, between which is the sterilizing room. A list of the operations to be performed is posted, and a short, succinct history is recited by the operator, either before he commences or during the operation. The visiting physicians are invited into the operating room after the patient is anæsthetized. The anæsthetic is given upon the operating table, the patient receiving the final preparation the meanwhile. The anæsthesia is administered by nurses of large experience and consummate skill. Ether is used in the great majority of cases. Chloroform in rare instances,

where for some reason ether is contra-indicated, as in bronchitis or pulmonary congestion. One of the anæsthetizers, Miss Alice McGaw, reported 11,000 anæsthesias in the New York and Philadelphia Medical Journal, November 12th, 1904. She says: "Out of the 11,000 anæsthesias, I have never been so unfortunate as to have a death directly from the anæsthetic, neither have there been many scares, for in six consecutive years artificial respiration has not been resorted to." Gas and ether, gas being used as a preliminary to ether, was used in 1,000 cases, but the advantages were not considered sufficient to warrant its continuance. Local cocaine anæsthesia by the infiltration method is used in appropriate cases. Spinal anæsthesia is not employed. Miss McGaw describes the technique of administering ether as follows:—"A thick pad of moistened cotton is placed over the eyes to protect them from the anæsthetic. The inhaler used is the improved Esmarch mask with two thicknesses of stockinet. The mask should be boiled and the stockinet changed after each patient. Ether is given by the drop method from the original can provided with a notched cork and a bit of gauze protruding to direct the drops, and as slowly and carefully and with as much air as though you were using chloroform, continuing until the patient's face is flushed. You then add a few layers of surgeons' gauze to the stockinet covering and

give ether a trifle faster, until the patient is asleep. We then remove the gauze and continue with the same covering as at the start." She adds, "After complete narcosis it is surprising how little ether is required to keep the patient in a perfect state of surgical anæsthesia. Cutaneous sensibility is tested by pinching the skin; the indications thus obtained are more reliable than those obtained by touching the conjunctiva, the latter being dangerous and often infecting the eye. The method of administering chloroform is practically like that of ether except that it is given in less quantity and with more air." The methods of anæsthetizing at this clinic will bear close study and are worthy of imitation, for they are certainly unusually successful and safe. The patients rarely strangle, move, cough or vomit, and thus the work of the surgeon is greatly facilitated. Since Miss McGaw reported her 11,000 anæsthesias, she has added over 2,000 to the list, and still no deaths. Her associate has 7,000 anæsthesias to her credit without a fatality, and I doubt if this record is equaled the world over.

Hand sterilization for surgeons, assistants, and nurses consists of thorough scrubbing with soap and hot water flowing from the tap. This is followed by free use of Harrington's solution. Preparation of the operation field is practically the same. If the skin has a suspicious look, a coat of iodine is used to destroy the skin bacilli. Short sleeved gowns are worn. The

head and face are covered by separate pieces of gauze. The nurses are gowned in white, the head and neck being completely covered by white bleached cotton veil. Rubber gloves are worn in the majority of operations. Accidental wound infections are extremely rare. Their work is marked by simplicity and directness, and evinces great knowledge of surgical pathology and lightning-like deductions as to the conditions found and the procedures necessary to be employed. Their instruments are not numerous, and many are of their own contrivance, and so skilled and expert are they in their manipulation that they appear to serve as accessory fingers.

Their methods of closure vary somewhat. Iodine catgut is usually employed for the peritoneum and fascia, with horse hair for the skin. The latter suture may be subcuticular or an interrupted or continuous plain suture. If an exploratory laparotomy has been performed, strong linen is used for closure, in order that the patient may leave the hospital within a few days. In clean laparotomies the patients are allowed to sit up on the tenth to twelfth day, and leave the hospital on the seventeenth.

The Mayos believe in and practice free drainage, but the least uncomfortable and cumbersome drainage that will accomplish the purpose is selected. Gauze for drainage is frequently sewed to the tissues, for instance in cholecystotomy. In this way the gall blad-

der is made continuous with the skin. A favorite drainage tube is made by spirally incising the ordinary tubing, with gauze passing through, protruding at each end. This tube is more flexible and yielding than the ordinary perforated drainage tube.

To illustrate the scope and activity of a morning's work at the clinic, I will enumerate the cases which I witnessed at one session.

Case 1. Dr. C. H. M. Recurring appendicitis. 4-inch McBurney incision. Ligation of mesentery by iodine catgut. Purse string suture around base of appendix. Stump crushed by forcep and ligated. Inverted by Dr. Charles Mayo's special instrument. Lambert sutures over stump. Closure, tier suture, all by iodine catgut except skin. Subcuticular suture long, half curved cutting needle, coarse stitches, horse hair. Time twenty minutes.

Case 2. Dr. W. M. Uterine fibroma with pus tube. Operation, pan-hysterectomy. Ordinary median incision. Vessels ligated with iodine catgut. Round ligaments quilted to cervix to prevent cystocele. Adherent appendix removed as in previous operation. All raw surfaces sutured over. Peritoneum closed with iodine catgut. Locked suture going back between one and two c. m. from edge of peritoneum. Silk worm suture including all other layers completed the closure.

Case 3. Dr. C. M. Right inguinal scrotal hernia. Incision farther away from Poupart's ligament than usual and not carried so far down. Sack pulled out of internal ring with forceps. Dissected back by wet gauze friction. Cord not touched nor transplanted. Careful closure of inner ring. Fascia of external oblique, overlapped. Iodine catgut throughout, except skin.

Case 4. Dr. C. M. Adult male. Appendicitis abscess opened through McBurney incision. No washing. No attempt to find appendix. Free drainage. Tube and wicking.

Case 5. Dr. W. M. Adult female. Diagnosis, gall stones. Incision, short, vertical edge of right rectus. Gall bladder opened and drained. Appendix found adherent. Removed without enlarging incision. Rubber tubing surrounded by rubber tissue for drainage of gall bladder. Two rows of sutures in gall bladder. Inversion of aperture. Gauze strips sewed to gall bladder, projecting out over skin. Gauze backed up by cargin membrane. Drainage tube connected up with bottle for receiving bile.

Case 6. Dr. C. M. Patient has had suppurative epididymitis. Opposite testicle apparently normal. Castration of diseased testicle. Pure carbolic acid injected into stump of cord with blunt hypodermic needle. Cord ligated.

Case 7. Dr. W. M. Middle-aged male. History of pain in epigastrium. Gradual formation of tumor. Hemorrhage from stomach. Exploratory incision through right rectus. Tumor found at smaller curvature of stomach. Liver covered with malignant nodules. Wound closed with linen suture. Patient allowed to return home on third day.

Case 8. Dr. C. M. Boy aged five years. Hypertrophied tonsils and adenoids. Chloroform anæsthesia. Whitehead's gag with tongue depressor removed, employed. Tonsils pulled forward. Adenoids cureted as usual, followed by scrubbing with gauze.

Case 9. Dr. W. M. Middle-aged male. Losing flesh rapidly. Pain in epigastrium. Exploratory incision through right rectus. Stomach and gall bladder normal. Gassy appendix containing large concretion. No other cause for symptoms was found. Remarks:—We not infrequently find these patients suffering from chronic appendicitis to have lost flesh, and after the removal of the diseased organ we see them rapidly regain their health.

Case 10. Dr. C. M. Young female. Diagnosis, tubercular peritonitis. Median incision. Quantity of peritonitic fluid discovered. Both tubes removed. Remarks by William Mayo. "These cases of tubercular peritonitis are either fluid or plastic. The former occur most frequently in women. The infection pro-

ceeds in four cases out of five from the tubes. The plastic type is usually due to infection from the appendix or the cecal coil. Opening the abdomen does not usually completely cure these cases. Removal of the exciting focus is the radical treatment. It took us four years to learn these facts about tubercular peritonitis. Cases that are supposed to have been cured by simple laparotomy and exposure to light, air, etc., are found after a time to have masses in the abdomen. Later the original symptoms return. If thorough eradication of the exciting foci is practiced, these recurrences are rare. Never drain these cases if it can be avoided, for the drainage aperture will frequently result in a tuberculous fistula."

Case 11. Dr. W. M. Male, 15 years. Undescended testicle and left inguinal hernia. All the tissues cut away that restrict the descent of the testicle. "Everything except the vas may be sacrificed." Epididymis sutured to testicle. Remarks by William J. Mayo. "Sometimes where there is tension on the cord we suture the testicle to base of scrotum to prevent retraction into the canal. The best piece of work which Dr. Bevan of Chicago has accomplished in his article on operation for undescended testicle, which appeared two years ago. It is the most distinct and comprehensive exposé of the subject."

Upon the following day as many more cases of equal interest were witnessed. I will mention but two.

Case 12. Dr. W. J. M. Male, aged 65 years. Has been ailing for more than a year. Steadily losing flesh. Obstructive vomiting. Dilated stomach. Marked emaciation. Cachetic appearance. Diagnosis — Cancer of stomach. Incision through right rectus. The stomach exposed. Hemorrhage controlled by ligation of gastrohepatic omentum and superior vessels, in such manner as to leave all lymph nodes attached to the part of the stomach to be excised. Both ends of stomach securely clamped. Three-fourths of distal end of stomach removed. Stumps cauterized to prevent inoculation of the cut surfaces with cancer. Charred surface sutured over and over. Duodenum closed by purse string and inversion. Remnant of cardiac end of stomach anastomosed with jejunum by Murphy's button. Patient's condition on table extremely critical. But little anæsthesia given after exposure of stomach. Hemorrhage inconsiderable. This operation was performed between one and two o'clock, the end of a long morning's work in a very heated atmosphere. It occupied fifty minutes, and must have been a severe test upon the lasting powers of the operator. Remarks by Dr. William J. Mayo. "This patient's condition is pitiable in the extreme. The operation was not encouraged, but the patient begged for something to be done, as life in his present condition was more to be dreaded than death, therefore, we have consented reluctantly to op-

perate. It is unfortunate that these cases of gastric cancer come to us so late, and we regret to state that many of them come to us after several weeks or months treatment by the stomach specialist. The general practitioner, the internist, and the clever diagnostician are much more prompt in advocating surgical measures for these cases."

A week later, in answer to a letter of inquiry concerning this patient, I learned that he was convalescing without an unfavorable symptom.

Case 13. Dr. C. M. Stout male patient in the sixties, suffering from prostate obstruction. Medial perineal incision upon a grooved sound, opening urethra in membranous portion, left finger inserted in prostatic urethra. A small curved knife inserted along finger within urethra and lateral urethral wall incised into each lateral lobe, enlarging urethral opening at the apex of prostatic capsule by incision with knife as it is withdrawn from urethra.

Prostatic lobes are enucleated with finger and removed separately with Stone forceps. Hemorrhage controlled by hot gauze packing. Double drainage tube introduced into bladder through perineal wound.

Remarks:—I do not often use the tractors of Dr. Young or Dr. Simms, because I find them in the way of the enucleating finger. I have operated upon 63 cases during the past year in this manner, and the results are very satisfactory.

On this morning the elder Dr. Mayo, in his 85th year, and his wife, in her 81st, were both interested spectators at the clinic, and well might they be proud of their illustrious sons. Notwithstanding this constant round of operative work each morning of the most fatiguing and absorbing character, and the long hours at the office in the afternoon, the Doctors Mayo have both found time to contribute liberally from their voluminous statistics and their rich and unrivaled experience.

Dr. Charles H. Mayo has from time to time during the past few years contributed several interesting articles as follows:—"Thyroidectomy for Exophthalmic Goitre based upon Forty Cases," "Principles in Drainage," "Mortality, Disability, and Permanency of Cure in Surgery," "The Surgical Physiology of the Lymphatic System."

Dr. William J. Mayo, among valuable papers and addresses, has contributed the following: "Radical Operations for the Cure of Cancer of the Pyloric End of the Stomach," "The Association of Surgical Lesions in the Upper Abdomen," being the oration on surgery at the fifty-fifth annual session of the American Medical Association, 1904. "Surgical Tuberculosis in the Abdominal Cavity with special reference to Tuberculous Peritonitis."

Together the brothers have contributed the following valuable and world-read papers: "Diagnosis of

Gall Stone Disease based upon the Clinical Histories of 1,100 Operated Cases," "A Review of 1,000 Operations for Gall Stone Disease with special reference to the Mortality."

As to their statistics. In 1,000 operations for gall stone disease, there were 54 deaths, or an average mortality of 5%. Included in this group are acute and chronic infections, local peritonitis and complicating intestinal fistulæ. In 456 cases of simple gall stone disease, cholecystotomy, the mortality was less than one-half of 1%. In 149 operations for common duct stones the mortality was 10%; only 6½%, however, died within three weeks. The remaining 3½% succumbing later to anemia, general debility, etc. Six hundred cases of appendicitis were operated upon in 1904 with but four deaths. Twenty per cent. of this series were in the acute stage, and it was of this class only that there were any deaths. The results of their work upon the prostate have not been published.

At the meeting of the American Surgical Association at San Francisco last July, Dr. William J. Mayo reported that he and his brother had performed the operation of gastro-enterostomy 500 times, and that in the last 61 cases but one death had occurred.

Enough has been given to show that their results are unsurpassed, if indeed equaled at any of the world's great surgical clinics.

One of the charming traits of character which is at

once impressed upon the visitor at the Mayo clinic is their modesty and their fairness. During their work they are constantly giving credit to others for having originated ideas. They admit they are constantly learning and constantly reaching out for more accurate knowledge of the intricacies of pathology and more perfect methods of management and technique. They are beloved by their associates, their patients, and by the entire community. They are spoken of by the residents of Rochester as Dr. Will and Dr. Charlie. They are craftsmen of the people. Simple, natural, liberal, tender-hearted, Christian gentlemen.

Their heart is in their work, not for the remuneration, but for the love of humanity, for the good that they can accomplish and for the progress of their science and their art. Their example is a stimulus to the hope and ambition of every surgeon and practitioner, and their influence upon the medical and surgical world, as well as their beneficence to humanity, is well-nigh beyond computation.

